U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

	Complete if Known
Application Number	10/613,623
Filing Date	07/03/2003
First Named Inventor	Gregory J. McRae
Group Art Unit	3629
Examiner Name	
Attorney Docket Number	037010-0105
	Application Number Filing Date First Named Inventor Group Art Unit Examiner Name

				U.S. PATENT DOCUMENTS	3	
	U.S. Patent D	ocument		Date of Publication of	Pages, Columns, Lines, Where Relevant	
Examiner Initials*	Cite No. ¹	Number .	Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear
DC	A1	6173240		Sepulveda et al.	01-09-2001	
		<u> </u>	· · · · · ·			

	FOREIGN PATENT DOCUMENTS								
Examiner Cite Foreign Patent D				ent Document Name of Patentee or		Date of Publication of Cited Document	Pages, Columns, Lines, Where Relevant		
Initials*	No.1	Office ³	Number ⁴	Kind Code ⁵ (if known)	Applicant of Cited Documents	MM-DD-YYYY	Passages or Relevant Figures Appear	T ⁶	
						•	,		
		i							

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T6
DC	A2	Adomian, G., Stochastic system analysis, in Applied Stochastic Processes, edited by G. Adomian, pp. 1-17, Academic, San Diego, Calif., 1980	
DC	А3	Cukier, R.I., Fortuin, C.M., Shuler, K.E., Petschek, A.G., and Schaibly, J.H., Study of the sensitivity of coupled reaction systems to uncertainties in rate coefficients, I, Theory, J. Chem. Phys., 59, 3873-3878, 1973	
DC	A4	Derwent, R.G., Treating uncertainty in models of the atmospheric chemistry of nitrogen compounds, Atmos. Environ., 21, 1445-1454, 1987.	
DC	A5	Dunker, A.M., The Decoupled Direct Method for calculating sensitivity coefficients in chemical kinetics, J. Chem. Phys., 81(5), 2385-2303, 1984.	
DC	A6	Gao, D, Stockwell, W.R. and Milford, J.B. "First order sensitivity and uncertainty analysis for a regional scale gas phase chemical mechanism, J. Geophysical Research, 100, 23, 153-23, 166, 1995.	
DC	A7	Gautschi, W., Algorithm 726: ORTHPOL-A package of routines for generating orthogonal polynomials and Gausstype quadrature rules, ACM Trans. Math. Software, 20(1), 21-26, 1994.	
DC	A8	Ghanem, R.G. and Spanos, P.D., Stochastic Finite Elements; A Spectral Approach, Springer-Verlag, New York, 1991 p.72-81.	

Examiner Signature	/Dwin Craig/ (11/16/2006)	Date Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

¹ Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that Issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control

7	Substitute fo	or form 1449B	/PTO	Complete if Known		
	INFORMATI	ON DISCLO	SURE	Application Number	10/613,623	
STATEMENT BY APPLICANT			CANT	Filing Date	07/03/2003	
				First Named Inventor	Gregory J. McRae	
				Group Art Unit	3629	
(use as many sheets as necessary)			cessary)	Examiner Name		
Sheet	2	of	3	Attorney Docket Number	037010-0105	

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁸
DC	A9	Koda, M., McRae, G.J. and Seinfeld, J.H., Automatic sensitivity analysis of kinetic mechanisms, Int. J. Chemical Kinetics, 11, 427-444, 1979.	
DC	A10	Kramer, M.A., Rabitz, H., Calo, J.M., and Kee, R.J., Sensitivity analysis in chemical kinetics: Recent developments and computational comparisons, <i>Int. J. Chem. Kinetics</i> , 16, 559-578, 1984.	
DC	A11	Lax, M.D., Approximate solution of random differential and integral equations, App. Stochastic Process, edited by G. Adomian, pp. 121-134, Academic, San Diego, Calif., 1980.	
DC	A12	McKay, M.D., Beckman, R.J., and Conover, W.J., A comparison of three methods for selecting values of input variables in the analysis of output from a computer code, <i>Technometrics</i> , 21, 239-245, 1979.	
DC	A13	McRay et al., Global sensitivity analysis A computational implementation of the Fourier Amplitude Sensitivity Test (FAST), Comp. Chem. Eng., 6, 15-25, 1982.	· · · · ·
DC	A14	Morgan, M.G., Henrion, M., and Small, M., Uncertainty, A Guide to Dealing with Uncertainty in Quantitative Risk and Policy Analysis, Cambridge University Press, New York, 1992.	-
DC	A15	Papoulis, A. Probability, Random Variables, and Stochastic Processes, 3rd Edition, McGraw Hill, NY, 1991.	
DC	A16	Pierce, T.H. and Cukier, R.I., Global Nonlinear Sensitivity Analysis using Walsh functions, J. Comput. Phys., 41, 427-443, 1981.	-

Examiner Signature	/Dwin Craig/ (11/16/2006)	Date Considered

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

¹ Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁶Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

MODIFIED PTO/SB/08 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control

	Substitute fo	r form 1449B	/PTO		Complete if Known	
	INFORMATI	ON DISCLO	SURE	Application Number	10/613,623	
	STATEMENT BY APPLICANT			Filing Date	07/03/2003	
•				First Named Inventor	Gregory J. McRae	
				Group Art Unit	3629	
	(use as many s	heets as ne	cessary)	Examiner Name		
Sheet	3	of	3	Attorney Docket Number	037010-0105	

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initiats*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T [®]
DC	A17	Pan, W., Tatang, M.A., McRae, G.J. and Prinn, R.G., "Uncertainty Analysis of Direct Radiactive Forcing by Anthropogenic Sulfate Aerosols, J. Geophysical Research, 102, (D18), 21,915-21,924, 1997.	
DC	A18	Serrano, S.E. and Unny, T.E., Random evolution equations in hydrogeology, Applied Mathematics and Computation, 39, 97s-122s, 1990.	
DC	A19	Tatang, M.A., Direct Incorporation of Uncertainty in Chemical and Environmental Engineering Systems, Ph.D. Thesis, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1995.	
DC	A20	Tatang, M.A., Pan, W., Prinn, R.G., and McRae, G.J. "An Efficient Method for Parametric Uncertainty Analysis of Numerical Geophysical Models, J. Geophysical Research, 102, (D18), 21,925-21,932, 1997.	
DC	A21	Wiener, N., The homogeneous chaos, Amer. J. Math., 60, 897-936, 1938.	

Examiner Signature	/Dwin Craig/ (11/16/2006)	Date Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the senal number of the patent document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁵Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.